Early pandemic forecast for South Korea M: multi-output M: multi-output M: repeated single-output (deaths) (deaths + mobility) (deaths) per million of population Prediction Prediction Prediction 1.5 1.5 1.5 Truth Truth Truth Death incidence 1.0 1.0 1.0 0.5 0.5 0.5 0.0 0.0 10 12 10 12 8 8 10 12 Days since April 22 2020 Days since April 22 2020 Days since April 22 2020 B: LSTM (deaths) B: Bi-LSTM (deaths) B: GRU (deaths + mobility) per million of population Prediction Prediction Prediction 1.5 1.5 1.5 Truth Truth Truth Death incidence 1.0 1.0 1.0 0.5 0.5 0.5 0.00.0 8 10 12 10 12 10 12 8 8 6 6 6 Days since April 22 2020 Days since April 22 2020 Days since April 22 2020 B: ARIMA wavelet **B**: Persistence Prediction Prediction per million of population 1.5 1.5 Truth Truth Death incidence 1.0 1.0 0.5 0.5 0.0 10 12

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Days since April 22 2020

10 12

Days since April 22 2020